8. A laser diode system, comprising:

a first cavity comprising a first waveguide having a first reflector at a first end of the first waveguide and a second reflector at a second end of the first waveguide, the first cavity having a ~~fist~~ first section with an outcoupling aperture;

a second cavity comprising a second waveguide and a third waveguide and the first section of the first cavity, the second waveguide having a third reflector at a first end of the second waveguide, and the third waveguide having a fourth reflector at a first end of the third waveguide; and

wherein the second waveguide is optically connected to the first cavity at a first end of the first section of the first cavity, and wherein the third waveguide is optically connected to the first cavity at a second end of the first section of the first cavity.

9. The laser diode system of Claim 8, wherein light emitted from the first cavity is modulated by varying a voltage applied to a section of the first cavity.

10. The laser diode system of Claim 8, wherein the outcoupling region includes an outcoupling grating; and

wherein the outcoupling grating has a period which is an integer multiple of the wavelength of light generated in the first cavity, but not an integer multiple of the light generated in the second cavity.